

# Covid-19 seroprevalence in HIV-infected and non-infected residents of a Long Term Care Facility in New Jersey

Reza Peymani M.D., Manisha Gurumurthy M.D., Amy Davidow PhD, James Gonzalez MPH,  
Pauline Thomas M.D., Edward Lifshitz M.D., Stephen Friedman M.D.  
Rutgers University NJMS, Dept. of Preventive Medicine

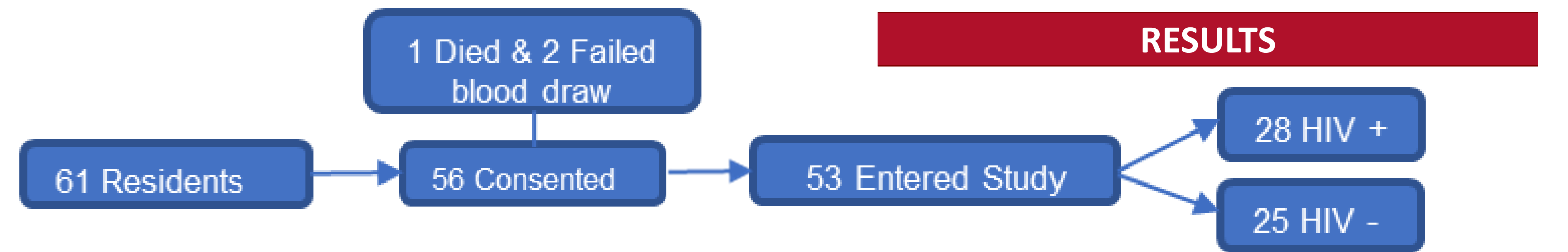


## BACKGROUND

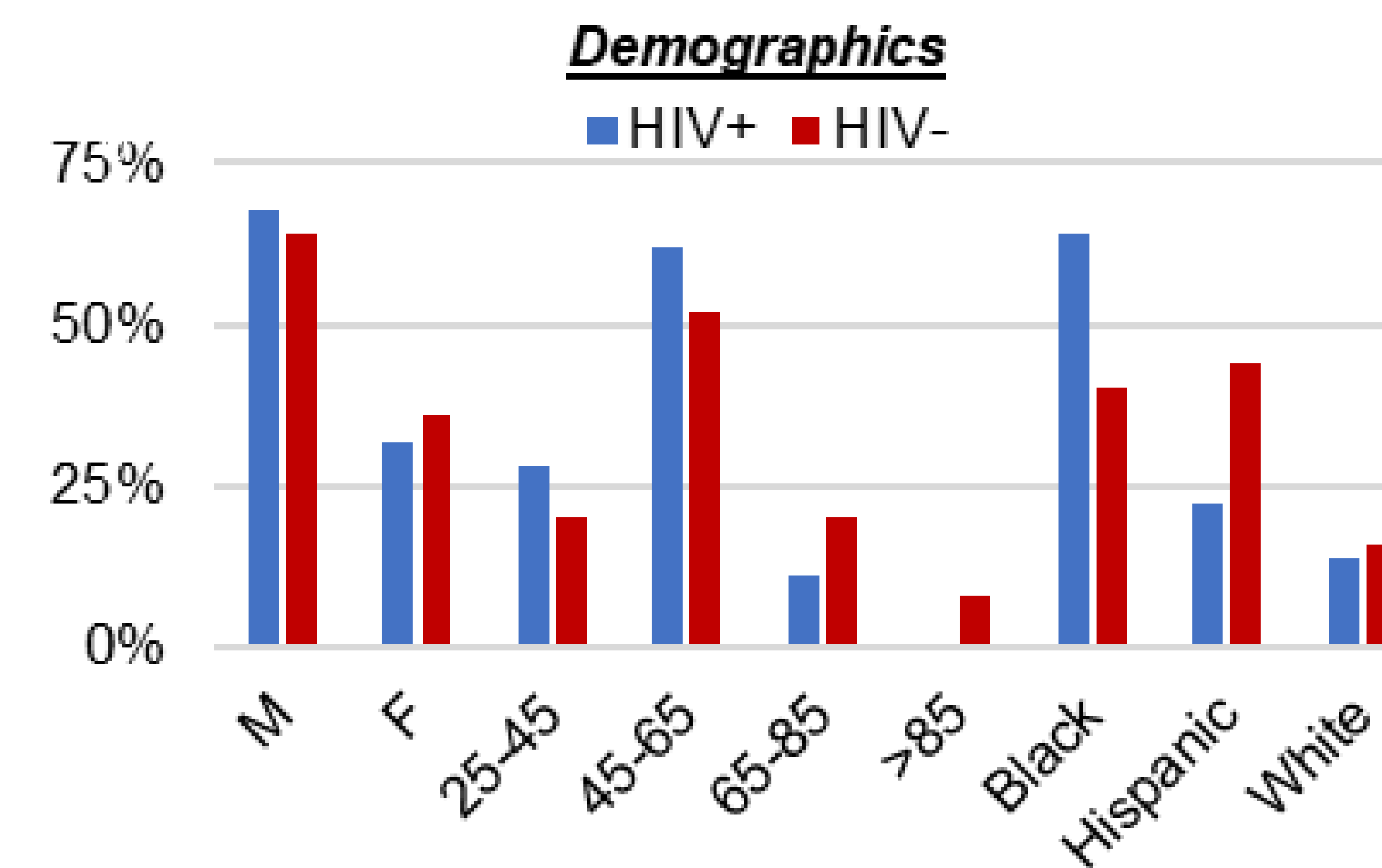
- SARS-CoV-2 has caused a large spectrum of symptoms and outcomes based on age, gender, genetic makeup, health status and other as yet-unknown characteristics.
- In 2019, 38 million people were living with human immunodeficiency virus (HIV) globally, with 1.2 million residing in the United States. Literature is limited about the clinical effects of SARS-CoV-2 in patients with HIV infection or the quality/quantity differences in antibody (AB) development against this virus in co-infected individuals.
- The objective of this study is to compare the SARS-CoV-2 seroprevalence in HIV-infected (HIV+) and non-infected (HIV-) residents of a long-term care facility (LTCF) in New Jersey and to identify factors which may influence the development of antibody to the virus.
- Polymerase chain reaction (PCR) testing for SARS-CoV-2 was performed on all residents of this facility periodically (weekly) from April through December 2020.
- The living/housing environment, Covid-19 precautionary measures and frequency of contacts with visitors were similar for the HIV+ and HIV- residents of this facility.

## MATERIALS & METHODS

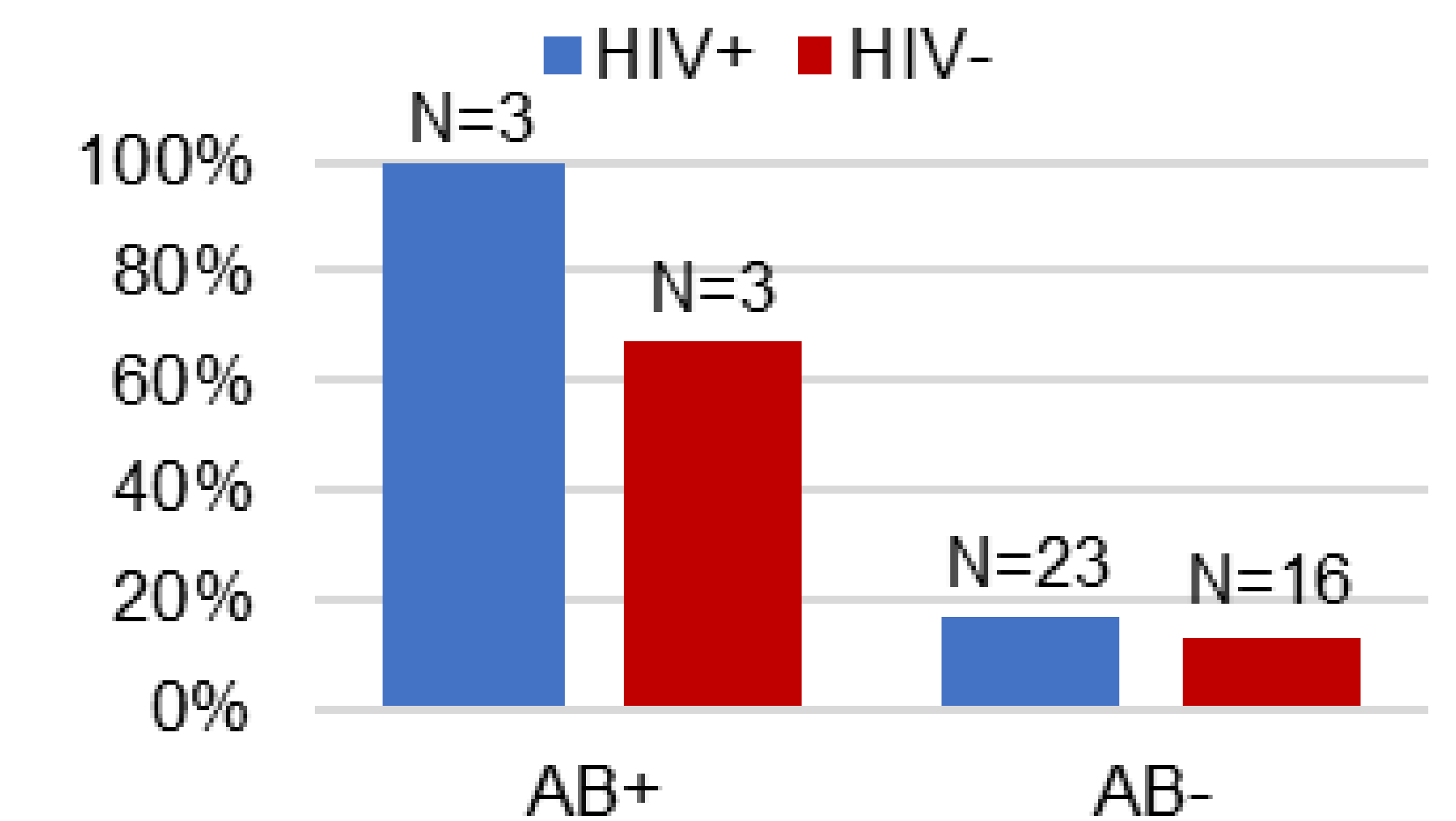
- Cross-sectional descriptive study comparing SARS-Cov-2 seroprevalence in HIV+ and HIV- residents of a LTCF serving individuals with HIV and other chronic health conditions.
- Blood sample collected (11/6-12/11, 2020) and sent for qualitative testing for antibody to the SARS-CoV-2 S (Spike) and N (Nucleocapsid) proteins performed at the New Jersey State Department of Health, Public Health and Environmental Laboratories (PHEL).
- Seropositivity was defined as positive to either S or a combined N/S protein assay.
- Medical records reviewed for age, sex, race/ethnicity, HIV positivity, CD4+ cell count, history of Covid-19 (positive PCR) and associated symptomatology, and history of symptoms consistent with Covid-19 (fever, chills, cough, SOB, fatigue, myalgia, loss of taste or smell and diarrhea) prior to PCR testing (Jan-April 2020).
- Rutgers IRB approval, residents' consents and facility's study participation agreement acquired.



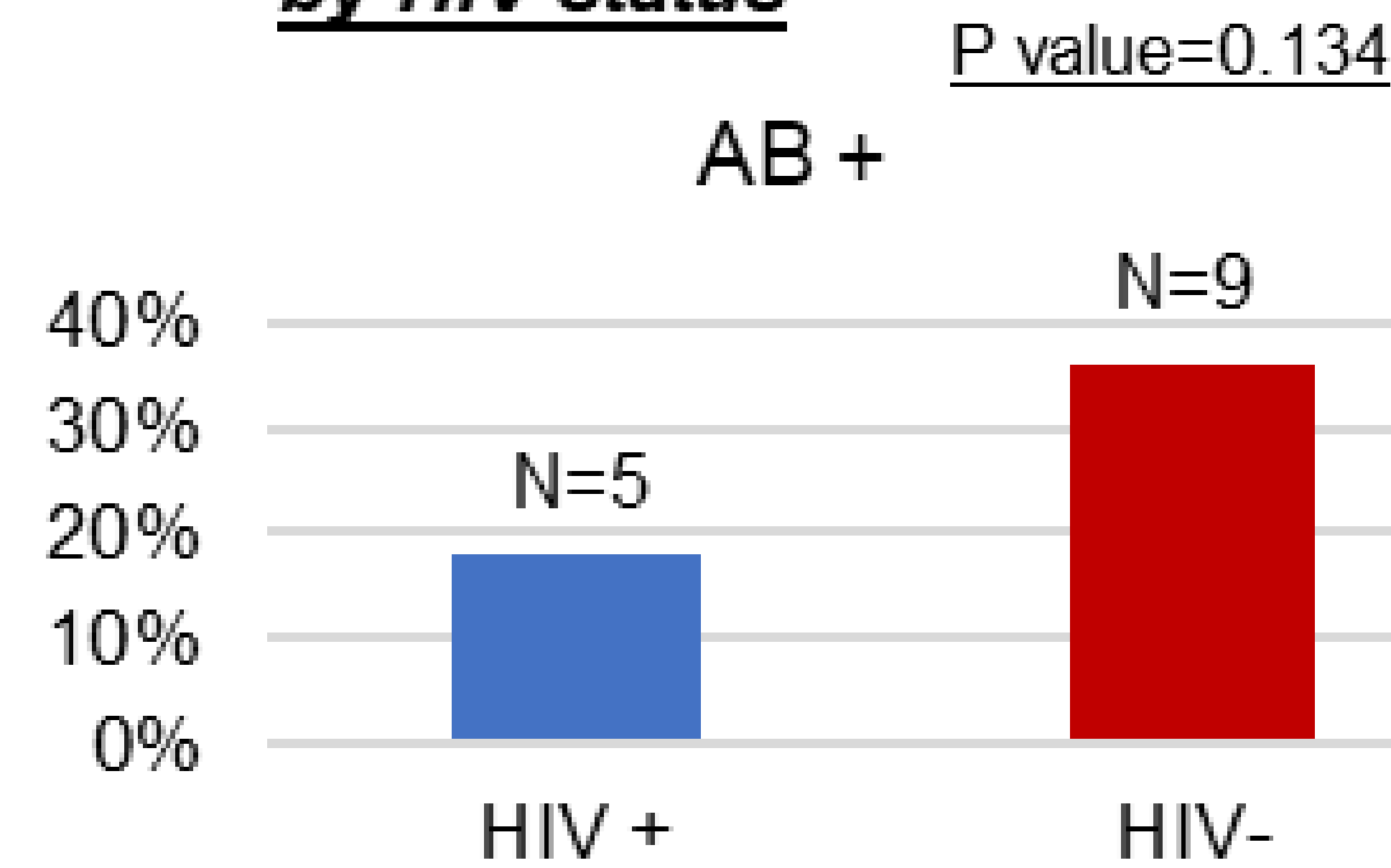
## RESULTS



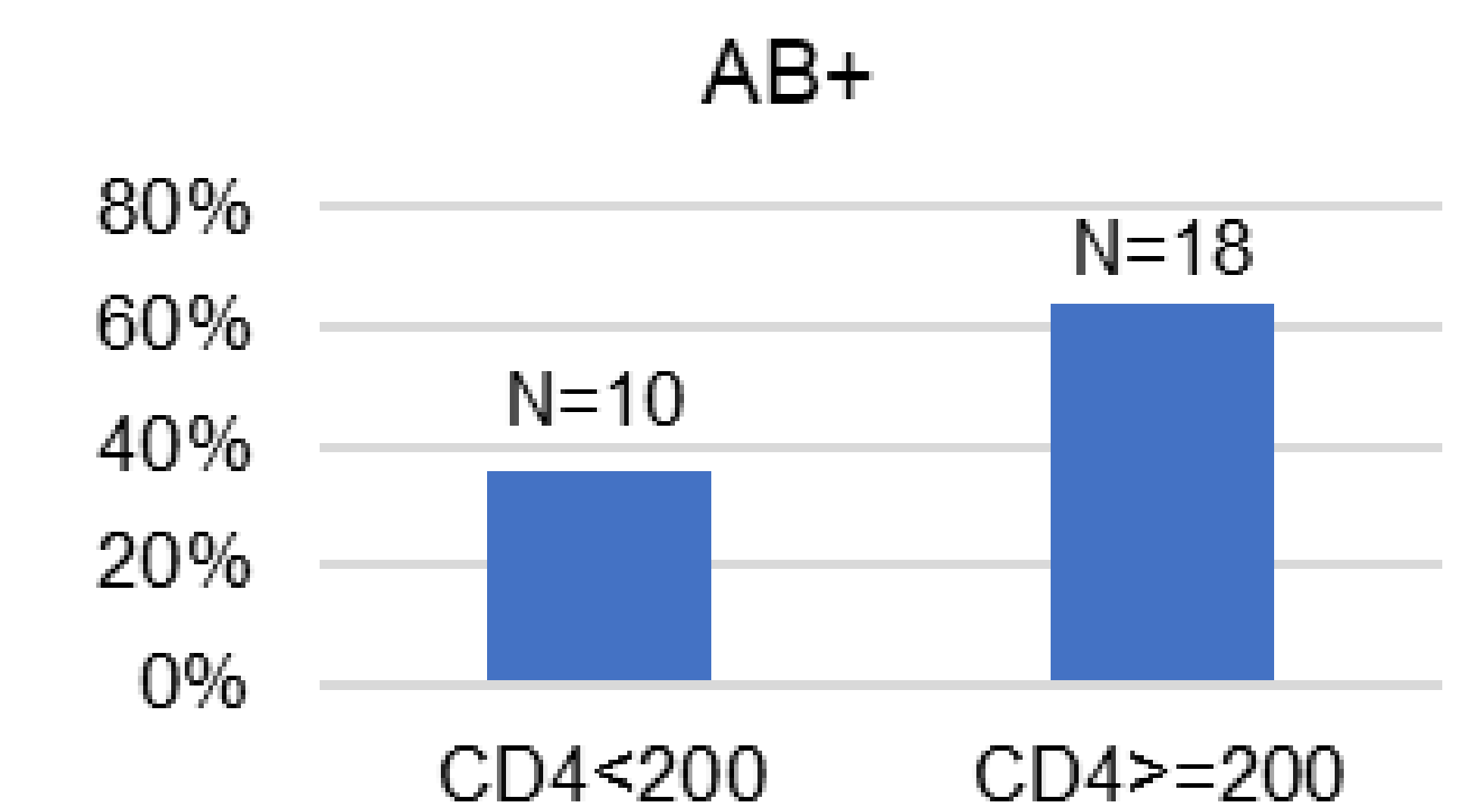
### Covid-19-consistent symptoms, Jan-Apr 2020



### SARS-CoV-2 seroprevalence by HIV status



### SARS-CoV-2 seroprevalence by CD4+ count within HIV+ group



## CONCLUSIONS

- The seropositivity prevalence was lower in HIV-infected than non-HIV-infected residents, although the difference was not significant likely due to the small study population.
- Factors influencing SARS-CoV-2 infection were not examined in this study and further studies with larger cohorts are needed to investigate them.
- HIV+ patients due to their immunodeficiency may have had decreased antibody production to SARS-CoV-2.
- Serology testing preceded Covid-19 vaccination in this facility, hence seropositivity reflects natural infection. PCR testing in this facility started in April 2020, therefore seropositivity in the absence of positive PCR is likely due to prior infection.